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EXAMINER	
LISTVOYB, GREGORY	
ART UNIT	PAPER NUMBER
1796	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/532,214	RADEMANN, JORG	
	Examiner	Art Unit	
	GREGORY LISTVOYB	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 April 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) *19-30* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/19/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☒ Other: *IDS: 8/23/2005*.

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Claims 1-18 in the reply filed on 4/14/2008 is acknowledged. The traversal is on the ground(s) that "since a search of each the inventions would be coextensive, it would not be a serious burden upon the Examiner to examine all of the claims in this application". This is not found persuasive because the inventions listed as Groups I-III do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: The invention as claimed in independent claim 1 does not define a special technical feature distinguishing the claimed invention over the prior art. The polymeric compounds claimed in claim 1 are fully anticipates by or being obvious over, for example, disclosure of US Patent 4614762 or US Patent 3471359.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 1-18 rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for polymeric composition based on

Polyethyleneimine and Polyvinylamine, does not reasonably provide enablement for any other polymer. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

Factors to be considered in determining whether a disclosure meets the enablement requirement of 35 USC 112, first paragraph, have been described by the court in re Wands, 8 USPQ 2d 1400 (CA FC 1988). Wands states at page 1404, the court set forth eight factors to consider when assessing if a disclosure would have required undue experimentation. Citing Ex parte Forman, 230 USPQ 546 (BdApls 1986) at 547 the court recited eight factors:

(1) The nature of the invention; (2) the state of the prior art; (3) the relative skill of those in the art; (4) the predictability or unpredictability of the art; (5) the breadth of the claims; (6) the amount of direction or guidance presented; (7) the presence or absence of working example and (8) the quantity of experimentation necessary.

<u>The nature of the invention and breadth of claims</u>

The claimed invention is a polymeric composition (see Claim 1), where the compound comprising a linear polymer linking together with linking groups. polymeric composition based on Polyethyleneimine and Polyvinylamine, The Specification does not reasonably provide enablement for any other polymer. Therefore, the scope of the Claims ("polymeric composition", meaning a composition based on any polymer) is much broader that one disclosed in the Specification.

The state of the prior art

In the prior art to Hird et al (WO 2000/55258), herein Hird as discussed below, discloses a polymeric composition based on Polyethyleneimine. Therefore, Prior Art does not teach other types of polymeric compositions with formula claimed in claim 1.

The amount of direction or guidance presented:

The Applicant does not provide any teaching regarding other polymers in the composition except for Polyethyleneimine and Polyvinylamine. In Examiner's position, this teaching would be necessary, considering that many other linear polymers can be crosslinked.

The presence or absence of working example:

There is no working Examples presented.

The quantity of experimentation necessary.

2. It is concluded that it would have require undue experimentation for one having ordinary skill in the art to practice the claimed invention to find appropriate step to expand the applicant's teaching to any other type of polymers beside polyalkylimines In re Wands, 858, F.2d at 737, 8 USPQ 2d 1400, 1404 (Fed Cir. 1988).

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4 and 17 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 claims the polymeric compound characterized in that only some, preferably less than 30%, more preferably less than 15%, in particular about 12% of the heteroatoms are connected to linking groups.

Claim 17 claims the "polymeric compound ... characterized that it has a loading with amino functionalities of about I0 to about 25 mmol/g, preferably about 15 mmol/g".

Terms "preferably", "particularly preferred", "more preferably" or "in particular" are indefinite and should be replaced , because it is unclear if or to what extent the preferred language further modifies less preferred language.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-7, 10-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Hird et al (WO 2000/55258), herein Hird.

Hird teaches a polymeric compound, based on linear polyethyleneimine of formula (R-X)n, where R is alkylene and X is imine (see Abstract, page 10 which meets the limitations of Claims 5,6,7 and 10). The composition comprises above linear cross-linked polymer (see Page 41, lines 10 and 19)

Regarding Claim 2, Hird teaches that the polymer is insoluble and it is used as anion -exchange adsorbent (see page 41, line 18).

In reference to Claims 3-4 and 12, Hird teaches that his polymer is cross-linked via heteroatom (see page 41, line 10) with ethylene glycol diglycidyl ether (epoxide) by relatively low degree of cross-linking (see page 10, line 20).

Regarding Claim 11, Hird teaches a cross-linked polyalylamine, which is polyvinylamine (see page 10).

Claims 7-9 are rejected under 35 U.S.C. 103(a) as being anticipated by Hird as evidences by Shepherd et al (Studies of cross-linked polyethyleneimine ion exchange resin, J. Chem Soc , pp89-92, cited in IDS), herein Shepherd.

Hird teaches a polymeric compound, based on linear polyethyleneimine of formula (R-X)n, where R is alkylene and X is imine (see Abstract, page 10 which meets the limitations of Claims 5,6,7 and 10). The composition comprises above linear cross-linked polymer (see Page 41, lines 10 and 19). Shepherd teaches cross linking structure, formed with dihalopropane.

Shepherd teaches anion-exchange polyethyleneimine resin, cross-linked with ethylene dibromide.

Shepherd discloses that resulting polyethyleneimine has a group CH2CH2N+

Therefore, since Hird and Shepherd teach the same polymeric structure and the same nature of cross-linking agent, the resulting anion-exchange group should be identical, i.e. R-N+.

Claim Rejections - 35 USC § 102/103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim17 and 18 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hird.

Hird teaches a polymeric compound, based on linear polyethyleneimine of formula (R-X)n, where R is alkylene and X is imine (see Abstract, page 10 which meets the limitations of Claims 5,6,7 and 10). The composition comprises above linear cross-linked polymer (see Page 41, lines 10 and 19).

Regarding Claim 17, Hird does not expressly teach values of loading with amino functionalities.

However, since Hird's polyethyleneimine is linear and slightly cross-linked, it has the same structure as polymer, disclosed in the Application.

Therefore, Hird's polymer values of loading with amino functionalities are inherently equal to ones of the Application.

Regarding Claim 18, Hird does not teach the polymer in form of resin micro pellets.

However, he teaches mixed bed ion-exchange adsorbent polyethyleneimine (see page 45) in form of grounded and sieved uniform particles.

The position is taken that the above particles are inherently equivalent to micro pellets claimed in claim 18.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-7, 10, 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimokawa (US 4708821), herein Shimokawa herein in view of Boussouira et al (US 2003/0190335) herein Boussouira.

Shimokawa teaches polyethyleneimine-based cross-linked gel for cosmetic applications, meeting the limitations of claims 1-7 and 10 (see Abstract, Colum 4, line 5), which is slightly crosslinked (1-15%, see Column 3, line 50) with dialdehydes, terephthalaldehyde, epoxy compounds, etc (see Column 4, line 25)., meeting the limitations of claims 12-15.

Regarding claim 8, Shimokawa teaches a polyethyleneimine with primary amino groups (see Column 4).

Shimokawa does not teach linear polyethyleneimine.

Boussouira teaches branched and linear cross-linked polyethyleneimines (see lines 0070, 0074 and Claim 1) for cosmetic compositions (Abstract and Claim 1).

Therefore, equivalence of linear and branched polyethyleneimines used for the same purposes is established.

It is a prima facie obvious to add a known ingredient for its known function (see *In re Linder* 173 USPQ 356).

Regarding Claim 16, Shimokawa does not teach dihalohalides as a cross-linking agent.

Boussouira teaches 1,6 dichlorohexane (see line 0107) as a cross-linker along with epoxides, which disclosed by Shimokawa.

Therefore, equivalence of 1,6 dichlorohexane and epoxides used for the same purposes as cross-linking agents are established.

It is a prima facie obvious to add a known ingredient for its known function (see *In re Linder* 173 USPQ 356).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GREGORY LISTVOYB whose telephone number is (571)272-6105. The examiner can normally be reached on 10am-7pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Rabon Sergent/
Primary Examiner, Art Unit 1796

GL